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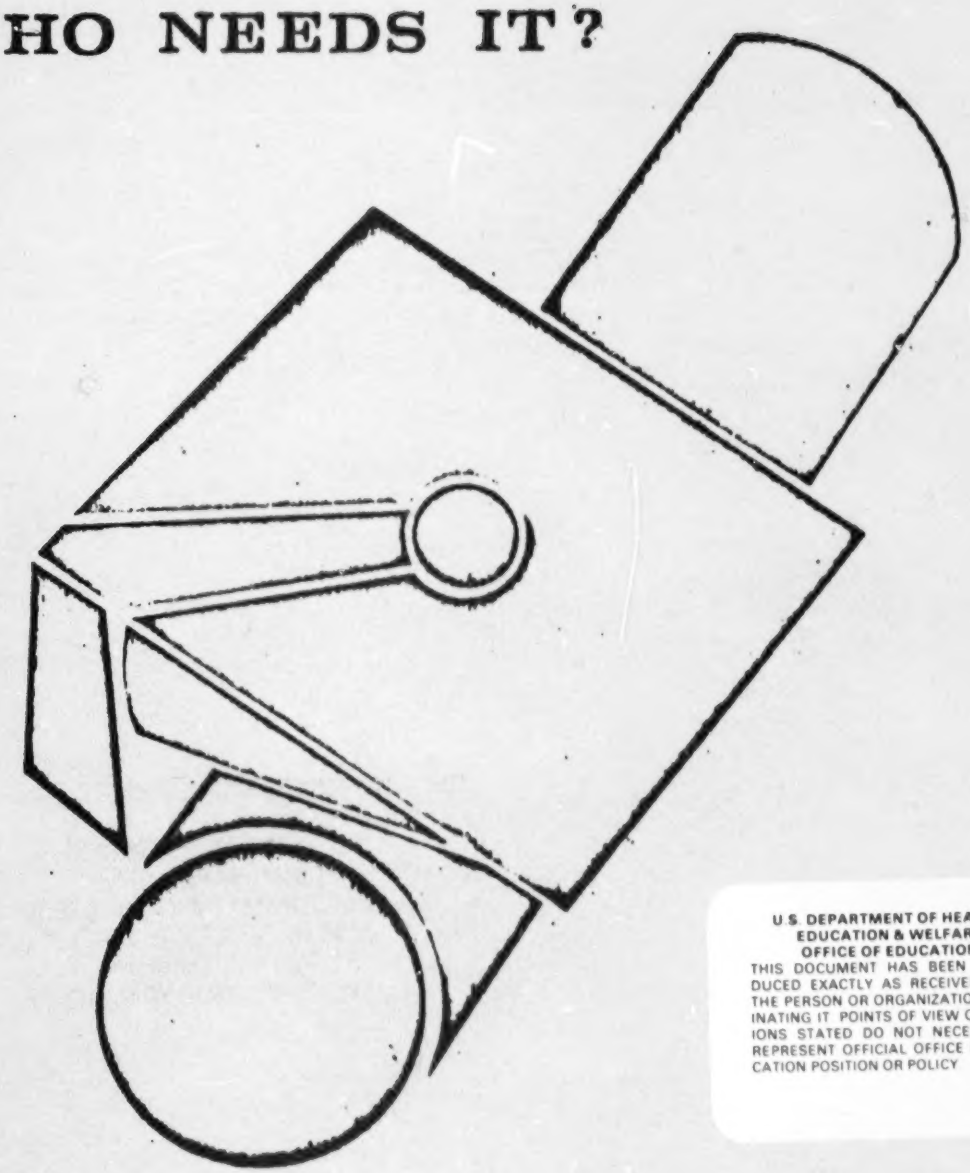
ABSTRACT

This Department of Labor report presents tables that describe future manpower needs and examine the changing nature of the labor force. Areas covered include: age distribution; job opportunities available; future growth; level of education of future labor force; educational differences between black and white labor force; and estimated lifetime earnings based on level of education. (CS)

ED 068009

COLLEGE:

WHO NEEDS IT?



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1971

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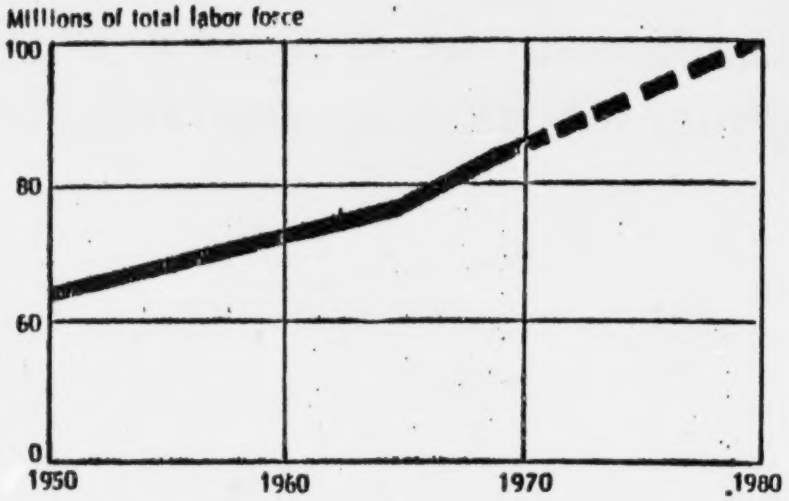
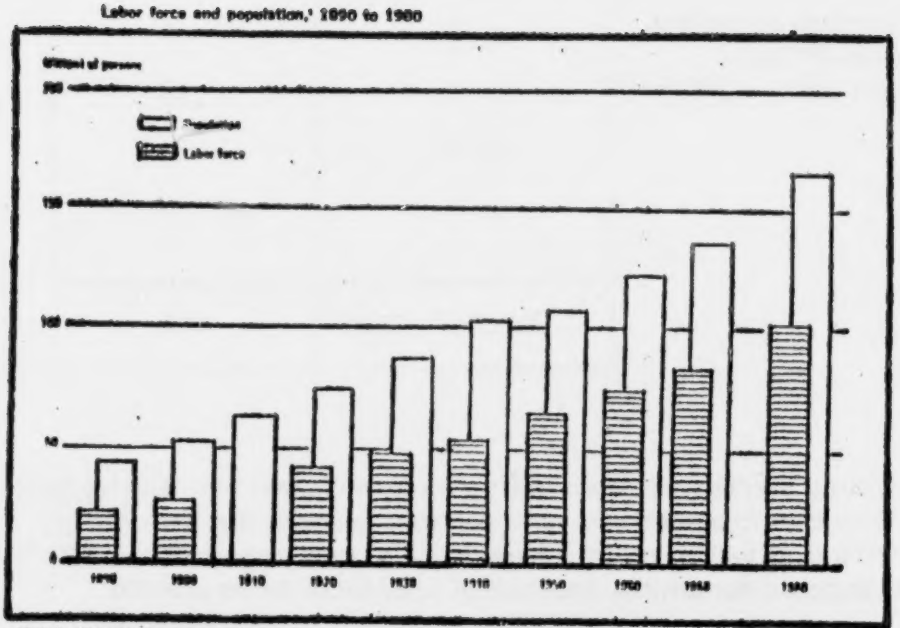
The 1970's will be a period of strong economic growth accompanied by extensive work force growth

The labor force — those who are working and those seeking work — is expected to number more than 100 million workers by 1980, growing by 15 million in the '70's.



Labor force and population,[1] 1890 to 1980



[1] Data for 1890–1900 refer to persons 14 years and over. Data for 1940 and 1950 refer to persons 18 years and over. Comparable labor force data are available for 1910.

Sources: U.S. Department of Commerce, Bureau of the Census; U.S. Department of Labor, Bureau of Labor Statistics; John D. Durand, The Labor Force in the United States, 1890–1960 (New York, N.Y., Social Science Research Council, Gregwood, The American Labor Force (New York, N.Y., John Wiley & Sons, 1966).

The number of workers in the prime 25-34 year old group will increase dramatically.

The largest labor force growth in the '60's was among those workers 16-24 years old. The dramatic increase in the '70's will be among young adults — age 25-34 — those entering their prime working years.

AGE GROUP	Percent change in the labor force	
	1960-1970	1970-1980
16-24	53	19
25-34	16	49
35-44	-1	13
45-54	15	-4
55-64	21	14
65 and over	-8	6
TOTAL LABOR FORCE	18	18.3

These young adults were born during the post World War II baby boom. In the '60's they crowded into high schools, colleges and entry jobs. In the '70's they will be moving beyond entry positions in the workforce, and will account for almost one-half of total labor force growth.

THE AGE DISTRIBUTION OF THE LABOR FORCE WILL CHANGE..

Age group	Total labor force 1970			Total labor force 1980 projected		
	Number (thousands)	Percent		Number (thousands)	Percent	
Total, 16 and over	85,903	100.0		100,727	100.0	
16-17	3,163	8.9	3.7	3,289	8.3	3.3
18-19	4,481		5.2	5,055		5.0
20-24	12,271	14.3		14,786	14.7	
25-34	17,678	20.6		26,242	26.1	
35-44	16,788	19.5		18,794	18.7	
45-54	17,020	32.9	19.8	16,341	29.1	16.2
55-64	11,281		13.1	12,952		12.9
65 and over	3,220	3.7		3,268	3.2	

Note: Figures may not add to totals due to rounding

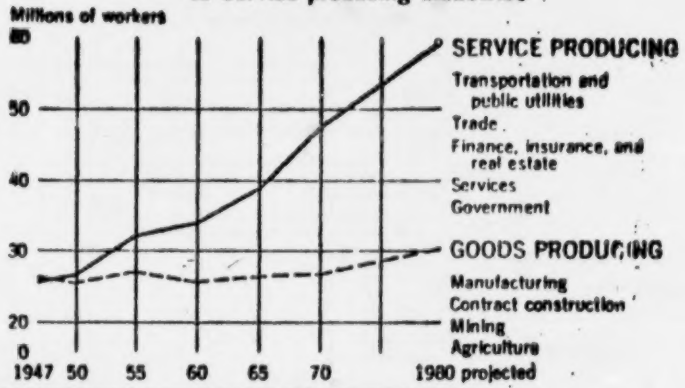
TOTAL LABOR FORCE

1980-1985, PROJECTED

Age group	1980		1985	
	Number (thousands)	Percent	Number (thousands)	Percent
Total, 16 and over	100,727	100.0	107,156	100.0
16-17	3,289	8.3 (3.3	3,072	7.0 (2.9
18-19	5,055	(5.0	4,367	(4.1
20-24	14,786	14.7	14,803	13.8
25-34	26,242	26.0	29,032	27.1
35-44	18,794	18.7	23,417	21.9
45-54	16,341	29.1 (16.2	16,076	27.1 (15.0
55-64	12,952	(12.9	12,986	(12.1
65 and over	3,268	3.2	3,403	3.2

Note: Figures may not add to totals due to rounding.

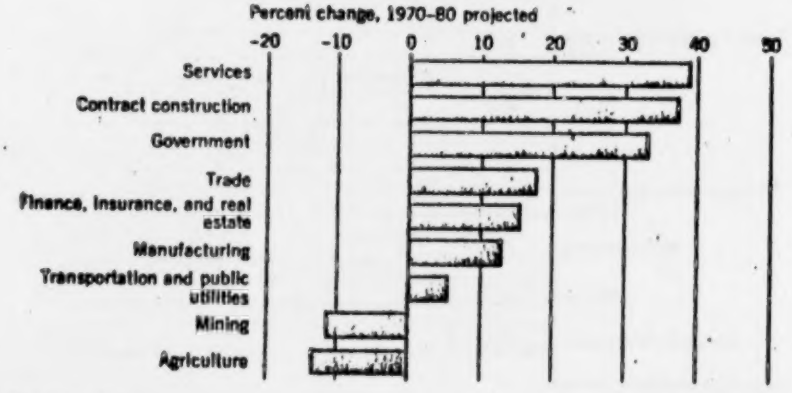
Employment* has been shifting from goods-producing to service-producing industries



*WAGE AND SALARY WORKERS, EXCEPT AGRICULTURE, WHICH INCLUDES SELF-EMPLOYED AND UNPAID FAMILY WORKERS

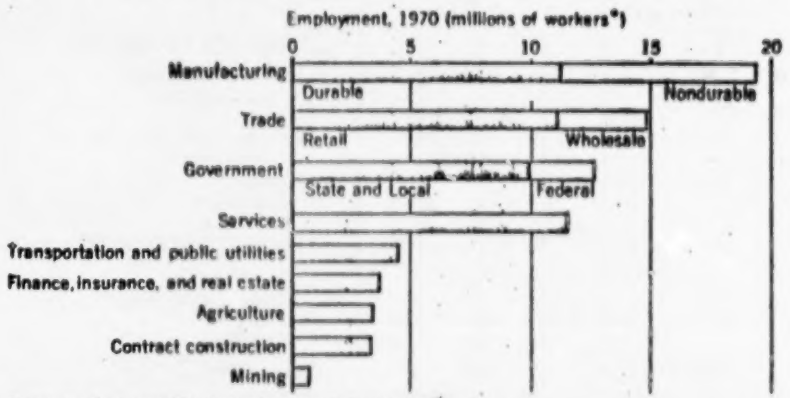
SOURCE: BUREAU OF LABOR STATISTICS

Through the 1970's, employment growth will vary widely by industry



SOURCE: BUREAU OF LABOR STATISTICS

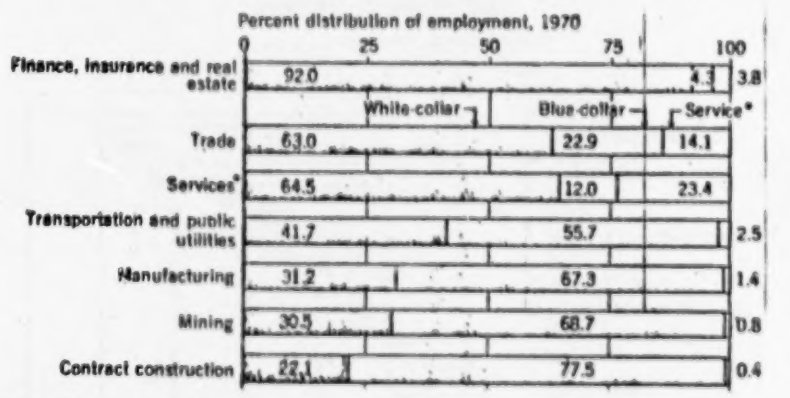
Manufacturing employs the largest number of workers



*WAGE AND SALARY WORKERS, EXCEPT AGRICULTURE WHICH INCLUDES SELF-EMPLOYED AND UNPAID FAMILY WORKERS

SOURCE: BUREAU OF LABOR STATISTICS

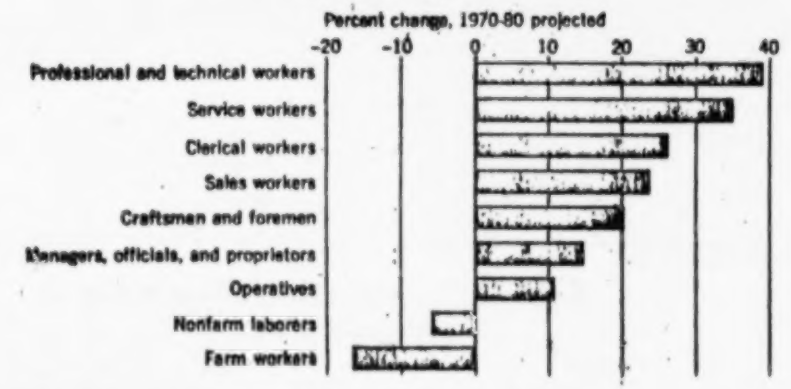
Industries differ in the kinds of workers they employ



*EXCLUDES PRIVATE HOUSEHOLD WORKERS

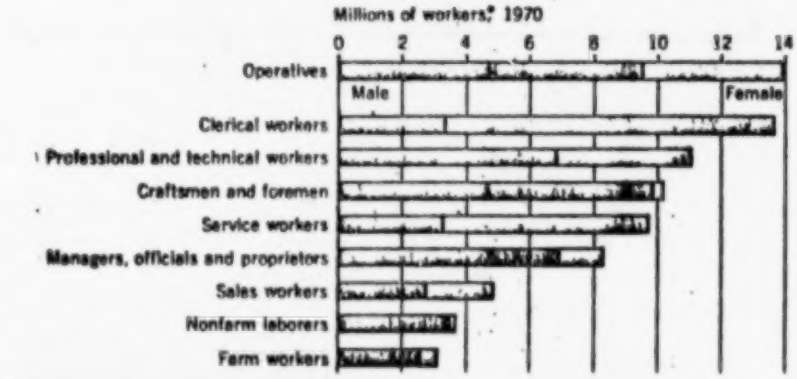
SOURCE: BUREAU OF LABOR STATISTICS

During the 1970's, growth will vary widely among occupations



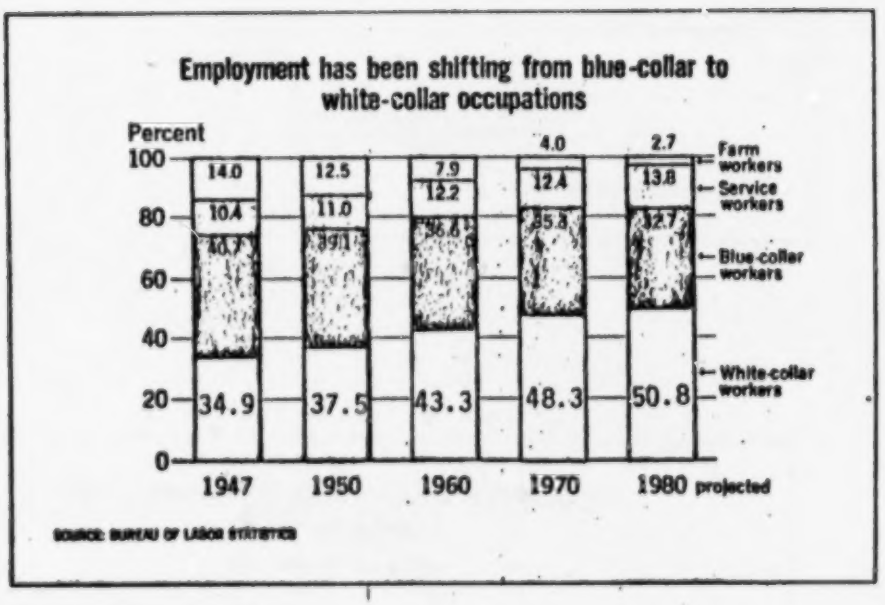
SOURCE: BUREAU OF LABOR STATISTICS

Employment in different major occupational groups varies by sex

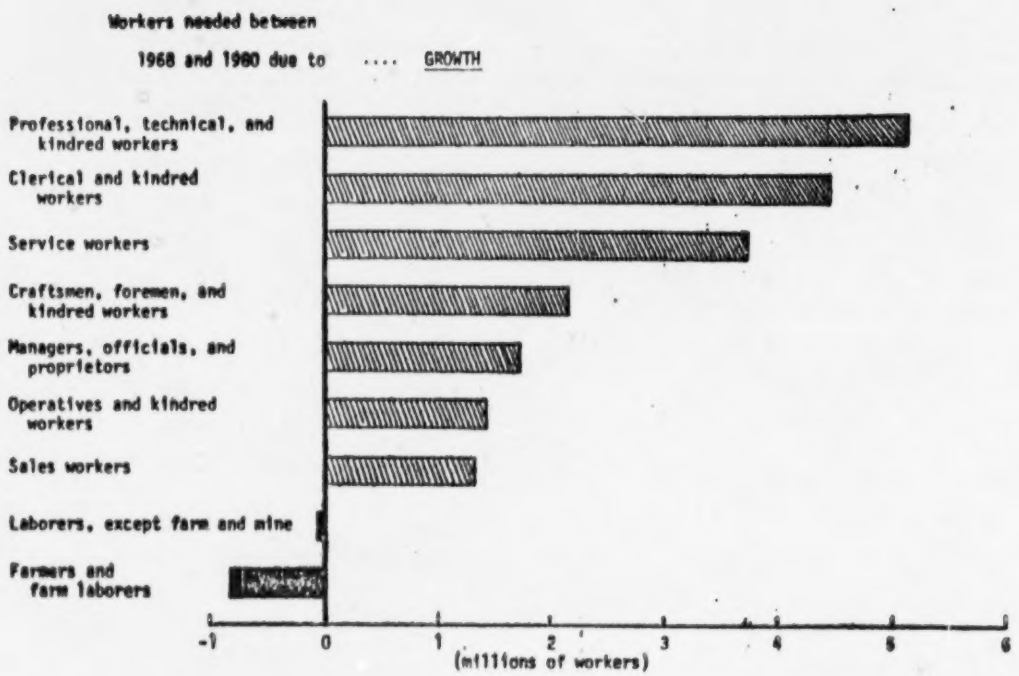


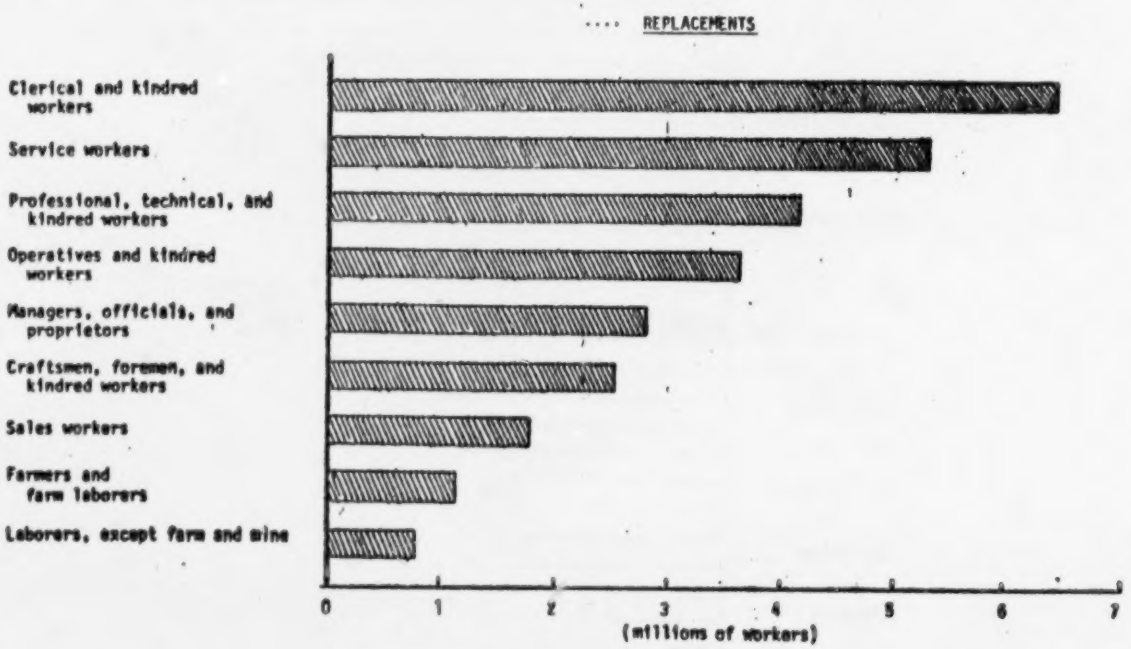
* INCLUDES SELF-EMPLOYED AND UNPAID FAMILY WORKERS

SOURCE: BUREAU OF LABOR STATISTICS


Employment has been shifting from blue-collar to white-collar occupations
Percent
100
80
60
40
20
0
14.0
10.4
40.7
34.9
12.5
11.0
39.1
37.5
7.9
12.2
36.6
43.3
4.0
12.4
35.3
48.3
2.7
13.8
32.7
50.8
1947
1950
1960
1970
1980 projected
Farm workers
Service workers
Blue-collar workers
White-collar workers
SOURCE: BUREAU OF LABOR STATISTICS

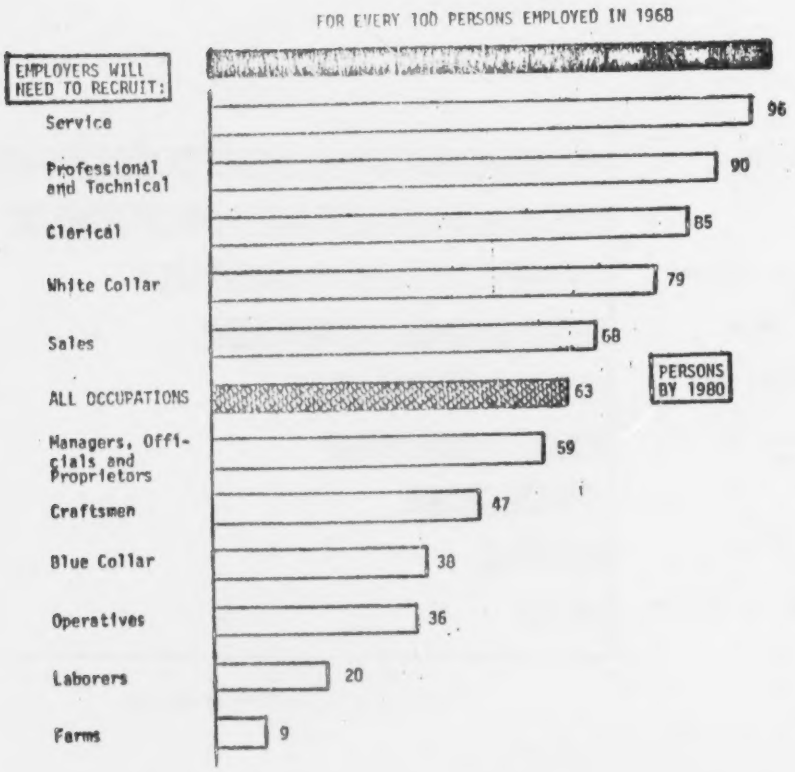
OPENINGS ARE DETERMINED BY GROWTH PLUS REPLACEMENTS



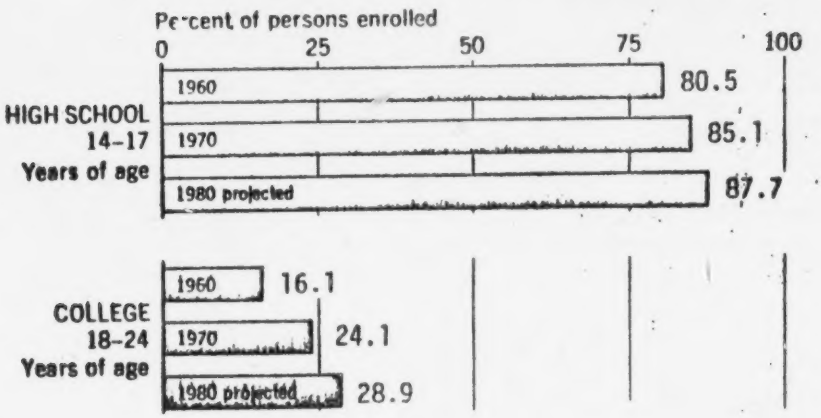


OCCUPATIONAL DISTRIBUTION OF JOBS TO BE FILLED
IN THE UNITED STATES
1968-1980
(In thousands)

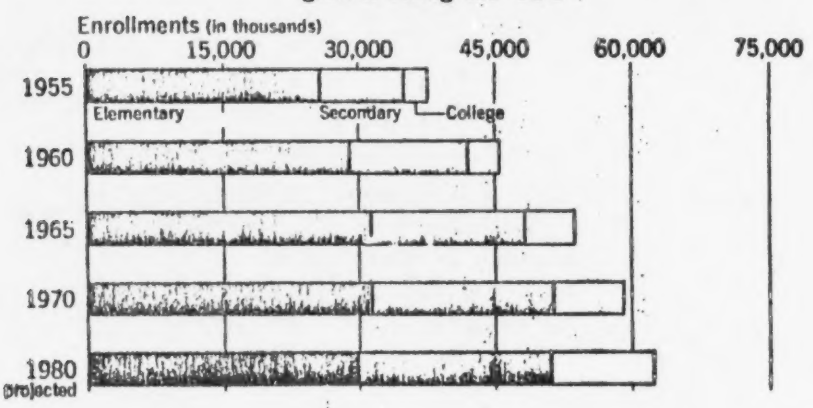
Occupation	Employment 1968	Jobs to be filled 1968-1980	Jobs resulting from		Employment 1980
			Industrial change (increase or decrease)	Death and Retirements	
All occupations	75,920	47,880	19,180	28,700	95,100
White collar occupations ...	35,551	27,972	12,749	15,223	48,300
Professional, technical, and kindred workers...	10,325	9,324	5,175	4,149	15,500
Managers, officials, and proprietors	7,776	4,560	1,724	2,836	9,500
Clerical and kindred workers	12,803	10,932	4,497	6,435	17,300
Sales workers	4,647	3,156	1,353	1,803	6,000
Blue collar occupations	27,525	10,584	3,575	7,009	31,100
Craftsmen, foremen, and kindred workers	10,015	4,752	2,185	2,567	12,200
Operatives and kindred workers	13,955	5,112	1,445	3,667	15,400
Laborers, except farm and mine	3,555	720	- 55	775	3,500
Service workers	9,381	9,024	3,719	5,305	13,000
Farmers and farm laborers	3,464	300	-864	1,164	2,600



School enrollment rates will continue to rise



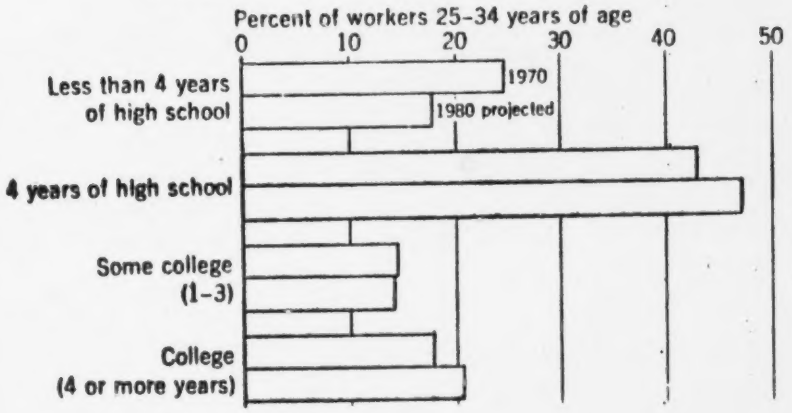
Of all school enrollments, college will show the fastest growth during the '70's



Year (Fall)	Elementary school enrollments	Secondary school enrollments	College enrollments (degree credit)	Total
1955	25,959	9,321	2,660	37,940
1960	29,150	13,031	3,583	45,764
1965	31,570	16,904	5,526	54,000
1970	31,500	20,100	7,608	59,208
1980 (projected)	29,900	21,400	11,234	62,534
Change in numbers, 1970-80 projected	-1,600	1,300	3,626	
Percent change, 1970-80 projected	- 5.1	6.5	47.7	

Source: U.S. Office of Education.
Note: Figures may not add to totals due to rounding.

Workers of the future will be better educated

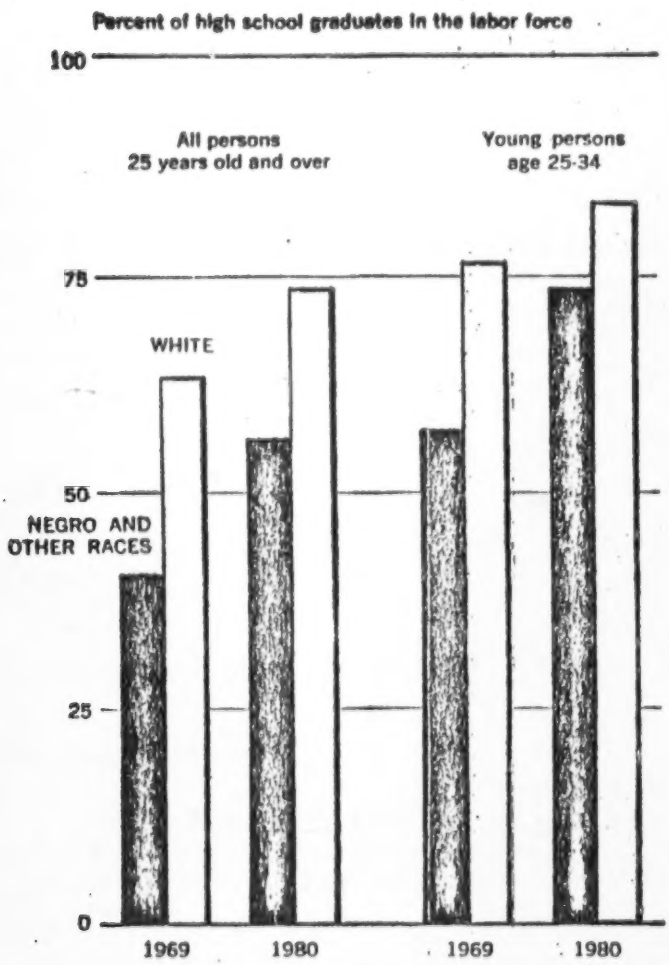


Years of school completed	Percent of workers 25-34 years of age	
	March 1970	1980 projected
Less than 4 years of high school	24.6	17.8
4 years of high school	43.0	47.3
Some college (1-3)	14.6	14.2
College (4 or more years)	17.9	20.7
	32.4	34.9

Educational attainment of the civilian labor force 25 years old and over by color, average 1967–69, and projected 1980

Years of school completed	Total		White		Negro and other races	
	1967–69 average	1980	1967–69 average	1980	1967–69 average	1980
	Number (thousands of persons 25 years old and over)					
Total	63,618	76,327	56,824	67,631	6,794	8,696
Less than 4 years of high school	24,723	21,846	20,578	18,027	4,145	3,819
Elementary: less than 8 years	6,551	4,366	4,675	3,141	1,876	1,225
8 years	6,967	4,679	6,225	4,099	742	580
High school: 1 to 3 years	11,205	12,801	9,678	10,787	1,527	2,014
4 years of high school or more	38,895	54,481	36,246	49,604	2,649	4,880
High school: 4 years	23,935	32,375	21,452	29,717	1,683	3,158
College: 1 year or more	15,760	22,106	14,794	20,384	966	1,722
1 to 3 years	7,024	9,185	6,548	8,376	476	809
4 years or more	8,736	12,921	8,246	12,008	490	913
	Percent distribution					
Total	100.0	100.0	100.0	100.0	100.0	100.0
Less than 4 years of high school	38.9	28.7	36.2	26.8	61.0	44.0
Elementary: less than 8 years	10.3	5.8	8.2	4.7	27.6	14.1
8 years	11.0	6.1	11.0	6.1	10.9	6.7
High school: 1 to 3 years	17.6	16.8	17.0	16.0	22.5	23.2
4 years of high school or more	61.1	71.3	63.8	73.4	39.0	56.1
High school: 4 years	36.4	42.4	37.8	43.2	24.8	36.3
College: 1 year or more	24.7	28.9	26.0	30.2	14.2	19.8
1 to 3 years	11.0	12.0	11.5	12.4	7.0	9.3
4 years or more	13.7	16.9	14.5	17.8	7.2	10.5

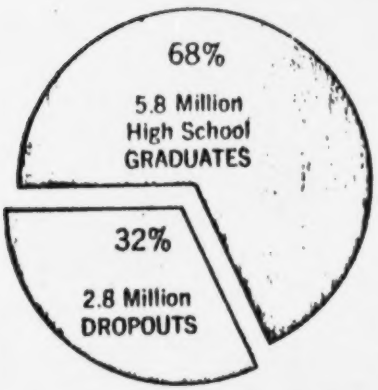
EDUCATIONAL DIFFERENCES BETWEEN THE BLACK AND WHITE LABOR FORCE WILL BE MUCH SMALLER BY 1980

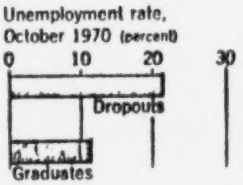


PERCENT WITH FOUR YEARS OF HIGH SCHOOL OR MORE, 1969 AND PROJECTED 1980, BY AGE AND RACE

	All ages 25 years old and over		Age 25-34	
Race	1969	1980	1969	1980
Negro and other races	40.8	56.1	57.1	73.6
White	63.5	73.4	76.4	83.8

Dropouts are a major segment of out-of-school youth, (16–21 years of age, 1970)

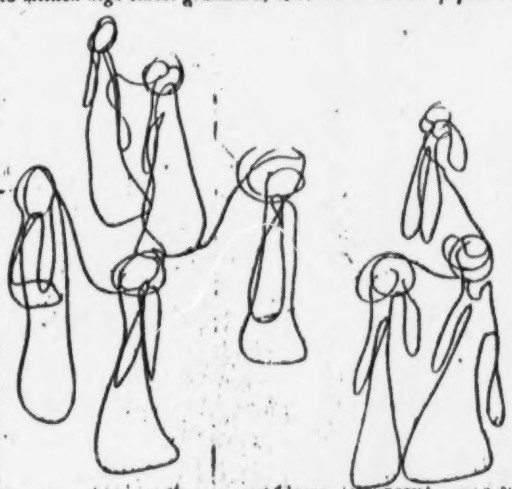




Where do all the high school graduates go?

(BLS survey shows what the 1968 high school graduates were doing in October 1968)

2.6 million high school graduates, 1967-68 in civilian population



To college: *1.4 million*

To more training: *134,000*

To jobs: *782,000*

To unemployment: *122,000*

To other pursuits: *124,000*

Where do all the dropouts go?

(BLS survey of young people 16-24 years old shows what those who dropped out of school in 1967-68 before finishing high school were doing in October 1968)

610,000 dropouts 12th grade or below

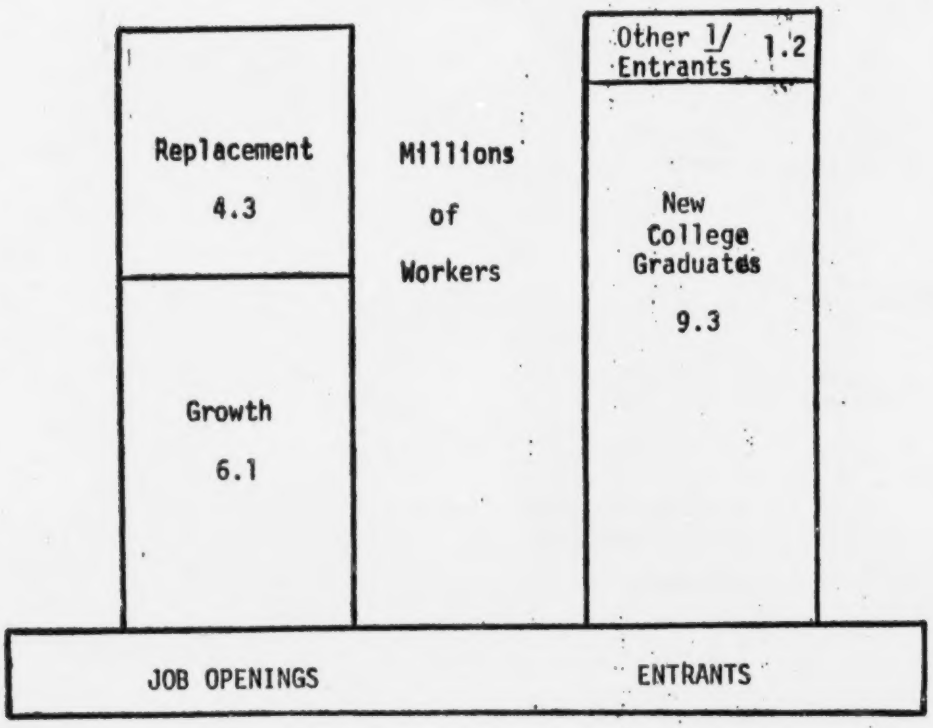
To special training: *20,000*

To jobs: *305,000*

To unemployment: *85,000*

To other pursuits: *200,000*

PROJECTED JOB OPENINGS FOR COLLEGE GRADUATES
AND PROJECTED ENTRANTS, 1968-1980



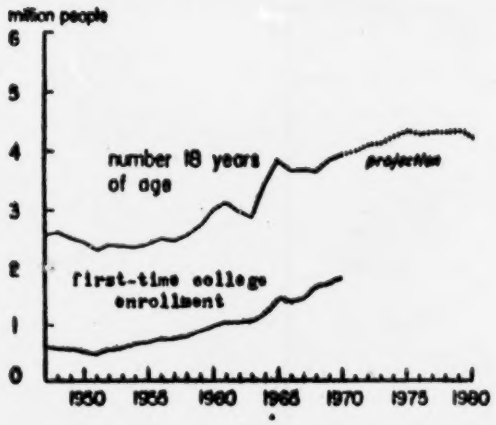
1/ Includes reentrants, delayed entrants, and immigrants.

College graduates as a percent of employed, 1959-1980

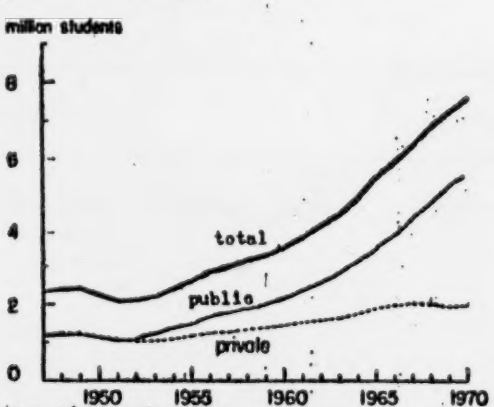
Occupational group	1959	1969	1970	1980 1/
All occupational groups	10.0	12.9	13.2	16.1
Professional and technical	56.1	59.1	59.8	66.0
Managers, officials, proprietors.	13.1	20.1	20.1	30.0
Sales	10.1	11.0	11.8	13.3
Clerical	4.9	4.5	4.7	4.5
All other	1.3	1.3	1.3	1.5

Source: Bureau of Labor Statistics.
1/ Projected.

Rising proportion of young people seek higher education

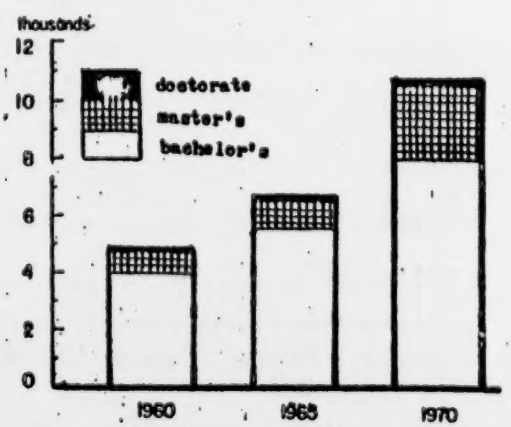


Enrollment: public versus private colleges



Note: Degree-credit enrollment at colleges and universities.

Rise in advanced degrees outpaces rise in bachelor's degrees



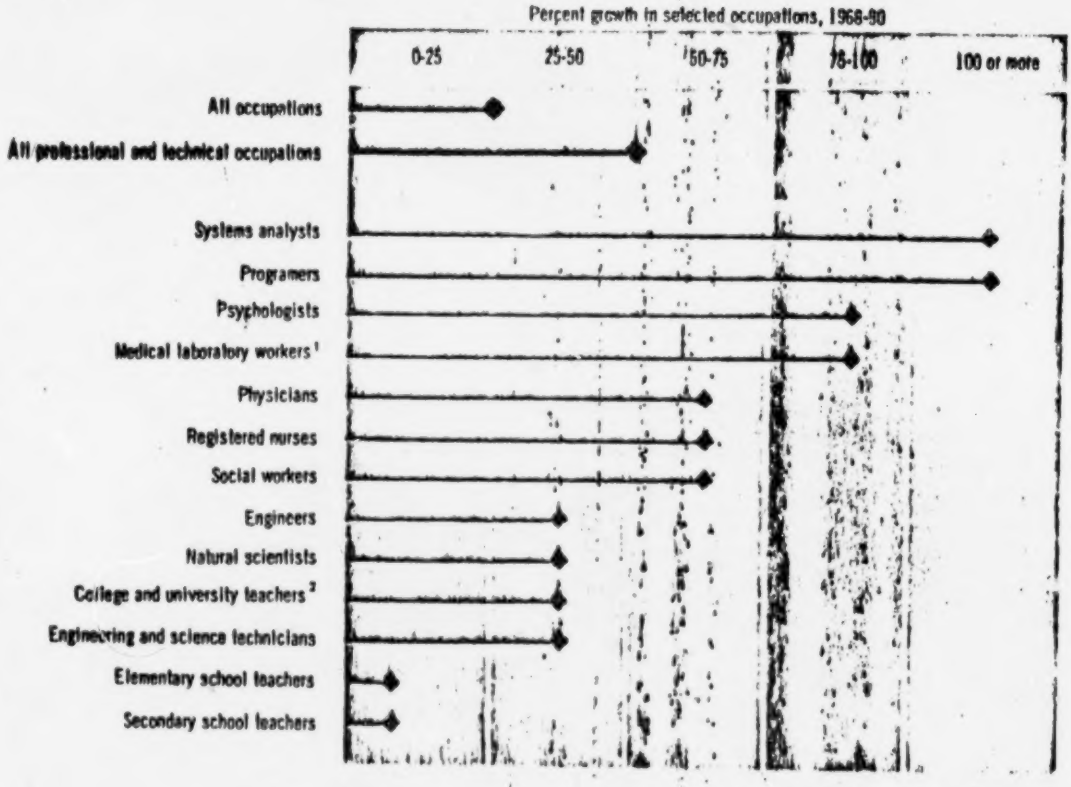
Selected Unemployment Rates, 1960–61 and 1969–71

Seasonally adjusted

Year and quarter	Professional and technical workers	Total labor force	Ratio of professional and technical rate to overall rate
1960:1	1.6	5.1	0.31
2	1.6	5.2	0.31
3	1.8	5.5	0.33
4	1.8	6.3	0.29
1961:1	2.1	6.8	0.31
2	2.1	7.0	0.30
3	1.9	6.8	0.28
4	2.2	6.2	0.35
1969:1	1.1	3.4	0.32
2	1.3	3.4	0.38
3	1.4	3.6	0.39
4	1.5	3.6	0.42
1970:1	1.8	4.1	0.44
2	1.9	4.8	0.40
3	2.0	5.2	0.38
4	2.5	5.9	0.42
1971:1	3.2	5.9	0.54

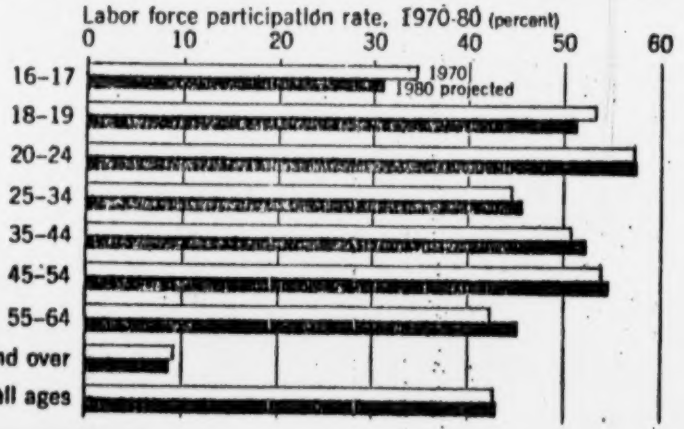
Source: *Employment and Earnings*, Vol. 17 (February 1971), pp. 53, 149, 184; (April 1971), p. 46.

Employment requirements will rise much faster in some professions than in others.



[1] Includes technologists, technicians, and aides.
[2] Full-time, holding rank of instructor or above.
Source: Department of Labor.

The proportion of adult women who work will continue to rise



SOURCE: BUREAU OF LABOR STATISTICS

Occupations for which a college education is generally required
(numbers in thousands)

Occupation	Employment 1968	Employment 1980	Percent Change 1968-80	Average Annual Openings 1968-80
Professional, technical				
Accountants	500	720	43.4	33.0
Advertising Workers	140	155	8.1	5.7
Marketing Research Workers	20	42	105.8	2.7
Employment Counselors	5	11	102.3	0.7
Rehabilitation Counselors	13	21	72.6	1.1
Engineers	1,100	1,500	40.2	73.4
Physicians	295	450	53.1	20.0
Pharmacists	121	130	7.0	4.4
Mathematicians	65	110	60.4	8.4
Life Scientists	170	240	41.1	15.2
Chemists	130	200	55.7	12.8
College and University Teachers	286	395	37.8	17.0
Elementary School Teachers	1,230	1,270	3.3	99.0
Secondary School Teachers	940	1,065	13.6	101.0
Architects	34	50	47.1	2.3
Lawyers	270	335	22.7	14.5
Librarians	104	135	28.6	8.2
Psychologists	32	58	81.3	3.1
Recreation Workers	40	70	75.0	4.1
Social Workers	160	270	66.7	16.7
System Planners	190	425	183.0	37.0
Sales				
Manufacturers Salesmen	900	738	47.1	32.8
Securities Salesmen	136	170	24.0	7.4

Occupations for which some specialized training is generally required
(numbers in thousands)

Occupation	Employment 1968	Employment 1980	Percent Change 1968-80	Average Annual Openings 1968-80
Professional, Technical				
Dental Hygienists	16	35	109.4	2.4
Registered Nurses	660	1,000	51.5	65.0
Medical Lab Workers	180	190	90.0	12.8
Radiological Technologists	75	120	60.0	7.3
Draftsmen	295	435	48.1	15.3
Engineering and Science Technicians	620	890	43.2	31.0
Surveyors	48	68	50.2	3.6
Clerical				
Dental Assistants	100	150	50.0	9.0
Library Technicians	70	125	77.1	9.8

Occupations for which high school graduation is generally required
(numbers in thousands)

Occupation	Employment 1968	Employment 1980	Percent Change 1968-80	Average Annual Openings 1968-80
Professional, Technical				
Dental Lab Technicians	27	38	38.9	3.1
Flight Engineers	7	12	59.3	0.2
Models	50	64	19.8	1.7
Pilots and Co-pilots	53	114	116.9	1.8
Clerical				
Bank Clerks	400	512	28.8	29.5
Bank Tellers	230	337	46.3	20.0
Bookkeeping Workers	1,300	1,500	18.9	78.0
Electronic Computer Operators	175	400	129.0	20.4
Receptionists	240	400	65.6	35.0
Stenographers and Secretaries	2,850	3,850	36.0	237.0
Sales				
Automobile Salesmen	120	145	20.8	4.4
Real Estate Salesmen and Brokers	225	270	20.1	14.2
Wholesale Trade Salesworkers	530	695	29.5	25.2
Craftsmen				
Electricians	190	270	42.1	10.5
Operating Engineers	285	410	43.9	14.8
Machinists	400	450	12.5	12.6
Tool and Die Makers	150	160	6.7	3.7
Aircraft Mechanics	135	230	70.4	9.7
Business Machine Servicemen	115	200	73.9	8.5
Bookbinders	30	25	-16.7	0.4
Foremen	1,444	1,730	19.8	58.7
Service				
Stewardesses (civilian aviation)	25	65	160.2	--

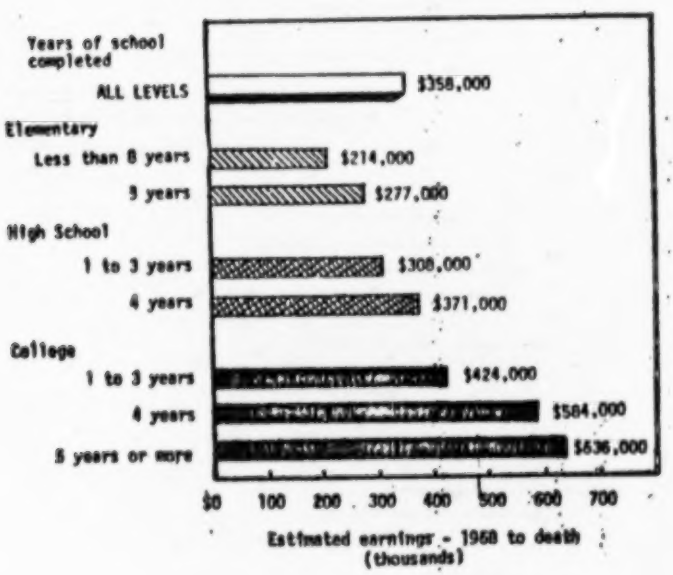
Occupations for which high school graduation is preferred but not essential
(numbers in thousands)

Occupation	Employment 1968	Employment 1980	Percent Change 1968-80	Average Annual Openings 1968-80
Clerical				
Cashiers	730	1,110	50.8	69.0
Mail Carriers	148	335	36.2	12.2
Postal Clerks	200	305	32.8	14.6
Shipping and Receiving Clerks	378	457	18.1	17.4
Sales				
Retail Trade Salesworkers	2,800	3,480	24.0	150.0
Auto Parts Counterman	68	80	23.1	2.5
Craftsmen				
Cement Masons	60	90	50.0	3.8
Roofers	55	80	45.5	3.8
Structural Workers	75	105	40.0	3.9
Plasterers	40	40	--	0.7
Operatives				
Waste Treatment Operators	23	40	68.9	2.3
Welders	480	675	40.6	23.0
Bus Drivers, Local	88	56	-13.9	0.5
Taxi Drivers	85	75	-10.7	1.2
Service				
Licensed Practical Nurses	329	600	87.9	48.0
Hospital Attendants	800	1,500	87.5	100.0
Cosmetologists	475	685	42.8	38.0

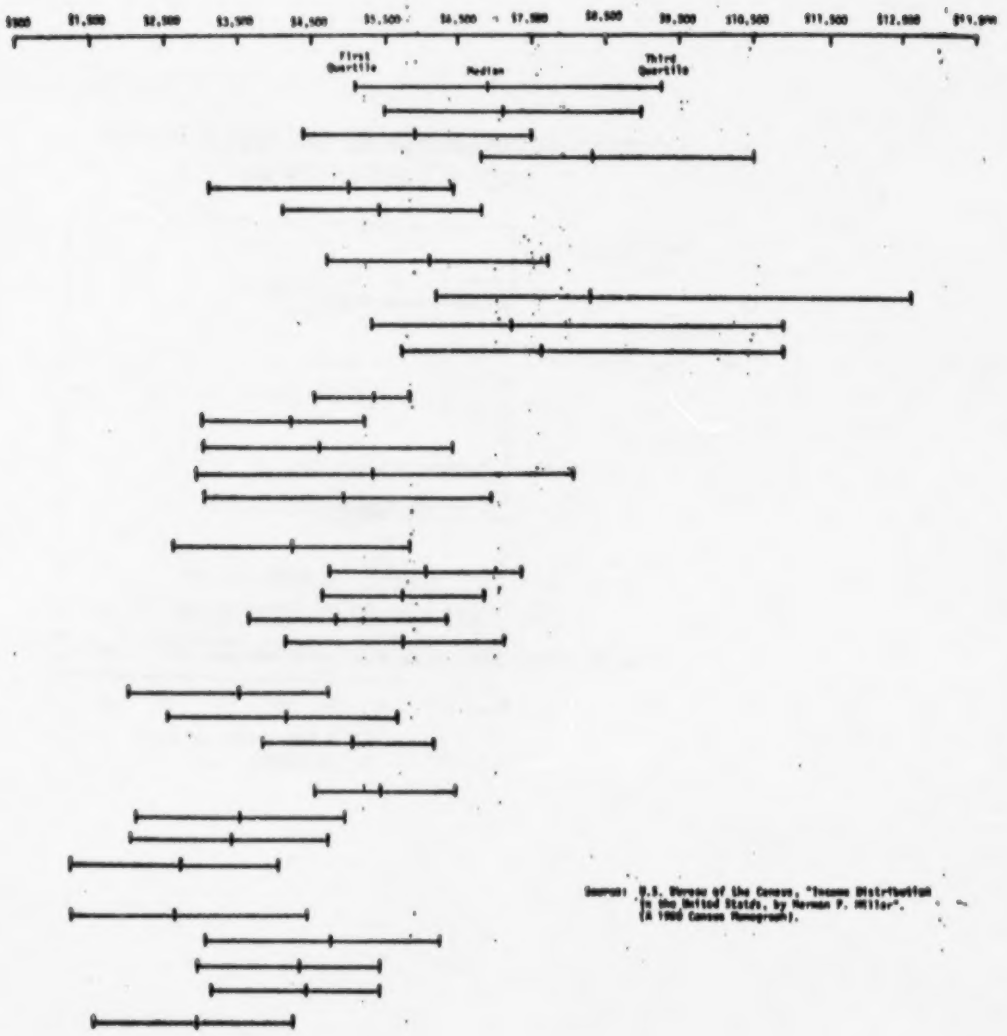
Occupational employment, 1968 and projected requirements, 1980, for college graduates

Occupation	Estimated 1968 employment	Projected 1980 requirements	Percent change	Supply estimated to be
Chemists	130,000	200,000	55.7	Significantly below requirements
Counselors	71,000	107,000	49.8	
Dietitians	30,000	42,100	40.3	
Dentists	100,000	130,000	31.7	
Physicians	295,000	450,000	53.1	
Physicists	45,000	75,000	63.9	
Engineers	1,100,000	1,500,000	40.2	Slightly short of requirements
Geologists and geophysicists	30,000	36,000	20.6	
Optometrists	17,000	21,000	23.5	
Architects	34,000	50,000	47.1	In balance with requirements
Lawyers	270,000	335,000	22.7	
Pharmacists	121,000	130,000	7.0	Slightly above requirements
Mathematicians	70,000	110,000	60.5	Significantly above requirements
Life scientists	168,000	238,000	40.8	
Teachers, elementary and secondary	2,170,000	2,340,000	7.8	

Estimated lifetime earnings for men tend to rise with years of school completed



WAGE AND SALARY INCOME OF ALL MALE WAGE AND SALARY WORKERS
IN THE EXPERIENCED LABOR FORCE AT QUARTILE POSITIONS,
BY SELECTED OCCUPATIONS, 1959



Source: U.S. Bureau of the Census, "Income Distribution in the United States, by Herman P. Miller". (A 1960 Census Monograph).

Median years of school completed by employed persons 18 years old and over, by sex, color, and major occupational group
March 1962 and March 1970

Major occupation group	Male				Female			
	White		Nonwhite		White		Nonwhite	
	1970	1962	1970	1962	1970	1962	1970	1962
All occupations	12.4	12.1	11.1	9.0	12.5	12.3	12.1	10.5
Professional, technical, and kindred workers	16.5	16.4	16.6	16.2	16.4	16.0	16.3	16.2
Managers, officials, and proprietors except farm	12.8	12.5	12.4	10.7	12.6	12.4		
Farmers and farm workers	9.5	8.8	6.6	5.6	10.4	9.3	1/	2/
Farm laborers and foremen	9.3	8.7						
Clerical and kindred workers	12.6	12.5	12.6	12.4	12.6	12.5	12.6	12.5
Sales workers	12.8	12.7			12.4	12.1		
Craftsmen, foremen, and kindred workers	12.1	11.3	10.5	8.9	11.0	9.9	11.6	10.0
Operatives and kindred workers	11.6	10.4	10.6	8.9				
Laborers, except farm and mine	11.0	9.4	9.2	8.1				
Private household workers	12.1	10.7	10.5	9.4	9.9	8.9	8.7	8.3
Service workers, except private household					12.1	11.3	11.2	10.7

1/ Median not shown where base is less than 75,000.
2/ Median not shown where base is less than 100,000.

BLONDIE

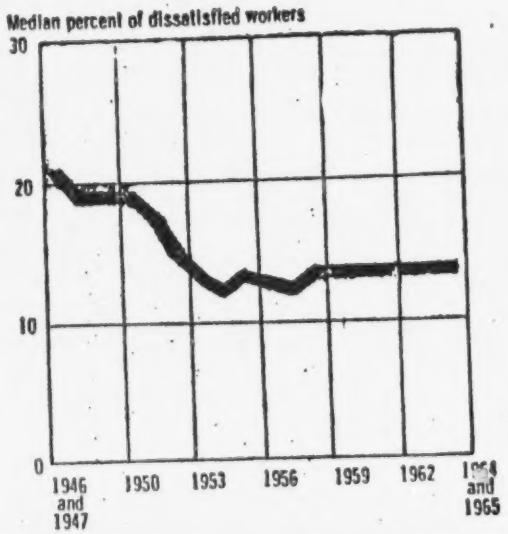
WHAT'S THE DIPLOMA YOU HAVE HANGING THERE?
THAT'S MY COLLEGE DIPLOMA
IF YOU GRADUATED FROM COLLEGE, HOW COME YOU'RE SHINING SHOES?
THAT'S WHAT I MAJORED IN

Education and workers' attitudes toward their jobs* (in percent)

	Education			
	0–11 grades	12 grades	College, no degree	College degree
Number involved	(975)	(854)	(407)	(388)
Job is:				
Enjoyable	70	78	82	89
Pro-con	22	16	14	8
Drudgery	7	4	3	2
Not ascertained	1	2	1	1

*The question was: "On the whole, do you feel that the work on your present job is drudgery, or is it all right, or do you enjoy your work?"

Frequency of job dissatisfaction appears to have declined over the past two decades.



Note: Each median percent represents an average compiled from studies on job dissatisfaction conducted by various researchers within a year or other time period.

Source: U.S. Department of Labor, based on data from Personnel and Guidance Journal, 1946-1965.

"Going to college -- any college -- does give to the individual a chance for a more satisfying life and to society the likelihood of a more effective community."

Dr. Clark Kerr
Chairman of the
Carnegie Commission
on Higher Education